Ontario

Ontario Influenza Bulletin 2007-2008 Season

Ministry of Health & Long-Term Care
Public Health Division

SURVEILLANCE WEEK 13 (March 23, 2008– March 29, 2008)

This issue of the Ontario Influenza Bulletin provides information on the surveillance period from March 23, 2008-March 29, 2008, (Week 13). The analysis for this issue occurred on Thursday April 3, 2008, therefore all data is current to that date unless otherwise specified.

Overall, influenza activity in Ontario during week 13, 2008 was higher than week 12, 2008. There were 107 confirmed cases of influenza A and 113 confirmed cases of influenza B reported through iPHIS from health units. There were 8 new reports of institutional influenza outbreaks. For week 13, the highest level of influenza activity was 'widespread' reported from Toronto, while 'localized' activity was reported from the remaining regions.

In Canada for week 12, influenza activity increased slightly with some indicators (laboratory detections, number of regions reporting widespread and localized activity and the number of outbreaks) having increased from the previous week. Widespread influenza activity was reported by 4 regions (in BC, AB, ON and QC) and localized influenza activity by 16 regions (in BC, AB, SK, ON, QC, NB & NS). Five regions reported no activity and 29 reported sporadic activity.†

Outbreak Data Entry Reminder:

Please ensure when entering confirmed institutional outbreaks using the iPHIS summary outbreak functionality, that the number of cases is entered along with the aetiologic agent (if known). This is particularly important for influenza outbreaks. This enables us to provide you with the most accurate and timely description of influenza activity in Ontario.

For a definition of influenza-like illness (ILI) activity levels and links to websites providing current influenza information from other sources, please refer to the attached Appendix- I. If you would like to provide feedback on the Bulletin, please contact Christine D'Souza (christine.dsouza1@ontario.ca, 416-212-5323) or Anne-Luise Winter (anne-luise.winter@ontario.ca, 416-327-7301).

Table 1: Summary of confirmed influenza cases and institutional influenza outbreaks by health region (Week 13, 2008).

Confirmed influenza cases*	HEALTH REGION							TOTAL
	North West	North East	Eastern	Central East	Toronto	South West	Central West	
Influenza A	0	8	4	29	33	12	21	107
Influenza B	0	12	10	16	56	8	11	113
Influenza A & B	0	0	0	0	0	0	0	0
Total new cases	0	20	14	45	89	20	32	220
Institutional influenza outbreaks‡	**0**	**0**	**1**	**0**	**3**	**1**	**3**	**8**

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [03/04/2008].

* Includes reports of confirmed influenza through iPHIS, as well as cases in institutional outbreaks, with dates of onset in the surveillance period.

† These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 12, 2008.

‡ Confirmed outbreaks in institutions with onset date of symptoms during the surveillance period.

Table 2: Confirmed cases of influenza by health unit & health region, with an episode date† during Week 13, 2008

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	0	0	0
	Thunder Bay District	0	0	0
	TOTAL NORTH WEST	**0**	**0**	**0**
North East	Algoma	3	3	6
	North Bay Parry Sound District	4	5	9
	Porcupine	0	1	1
	Sudbury & District	1	0	1
	Timiskaming	0	3	3
	TOTAL NORTH EAST	**8**	**12**	**20**
Eastern	City of Ottawa	2	8	10
	Eastern Ontario	0	1	1
	Hastings & Prince Edward Counties	0	0	0
	Kingston, Frontenac, Lennox & Addington	2	0	2
	Leeds, Grenville And Lanark District	0	1	1
	Renfrew County And District	0	0	0
	TOTAL EASTERN	**4**	**10**	**14**
Central East	Durham Region	0	1	1
	Haliburton, Kawartha, Pine Ridge	2	3	5
	Peel Region	24	12	36
	Peterborough County-City	0	0	0
	Simcoe Muskoka District	3	0	3
	York Region	0	0	0
	TOTAL CENTRAL EAST	**29**	**16**	**45**
Toronto	Toronto	33	56	89
	TOTAL TORONTO	**33**	**56**	**89**
South West	Chatham-Kent	0	0	0
	Elgin-St. Thomas	0	0	0
	Grey Bruce	2	4	6
	Huron County	1	2	3
	Lambton County	1	0	1
	Middlesex-London	3	0	3
	Oxford County	0	0	0
	Perth District	2	2	4
	Windsor-Essex County	3	0	3
	TOTAL SOUTHWEST	**12**	**8**	**20**
Central West	Brant County	0	1	1
	City Of Hamilton	9	4	13
	Haldimand-Norfolk	0	0	0
	Halton Region	2	2	4
	Niagara Region	5	0	5
	Waterloo Region	4	2	6
	Wellington-Dufferin-Guelph	1	2	3
	TOTAL CENTRAL WEST	**21**	**11**	**32**
	TOTAL ONTARIO	**107**	**113**	**220**

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [03/04/2008].

† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)

Table 3: Cumulative* confirmed cases of influenza by health unit & health region with an episode date† between September 1, 2007 – March 29, 2008

Region	Health Unit	Confirmed Influenza		
		Influenza A	Influenza B	TOTAL
North West	Northwestern	29	0	29
	Thunder Bay District	18	1	19
	TOTAL NORTH WEST	**47**	**1**	**48**
North East	Algoma	23	7	30
	North Bay Parry Sound District	41	21	62
	Porcupine	9	1	10
	Sudbury & District	12	9	21
	Timiskaming	8	9	17
	TOTAL NORTH EAST	**93**	**47**	**140**
Eastern	City Of Ottawa	34	57	91
	Eastern Ontario	9	15	24
	Hastings & Prince Edward Counties	7	7	14
	Kingston, Frontenac, Lennox & Addington	18	10	28
	Leeds, Grenville And Lanark District	6	4	10
	Renfrew County And District	3	2	5
	TOTAL EASTERN	**77**	**95**	**172**
Central East	Durham Region	57	13	70
	Haliburton, Kawartha, Pine Ridge	42	29	71
	Peel Region	275	85	360
	Peterborough County-City	11	4	15
	Simcoe Muskoka District	71	26	97
	York Region	80	18	98
	TOTAL CENTRAL EAST	**536**	**175**	**711**
Toronto	Toronto	632	262	894
	TOTAL TORONTO	**632**	**262**	**894**
South West	Chatham-Kent	5	0	5
	Elgin-St. Thomas	1	0	1
	Grey Bruce	39	11	50
	Huron County	44	8	52
	Lambton County	9	2	11
	Middlesex-London	29	6	35
	Oxford County	20	2	22
	Perth District	14	16	30
	Windsor-Essex County	17	3	20
	TOTAL SOUTHWEST	**178**	**48**	**226**
Central West	Brant County	5	5	10
	City Of Hamilton	159	46	205
	Haldimand-Norfolk	14	3	17
	Halton Region	84	24	108
	Niagara Region	55	6	61
	Waterloo Region	88	31	119
	Wellington-Dufferin-Guelph	52	8	60
	TOTAL CENTRAL WEST	**457**	**123**	**580**
	TOTAL ONTARIO	**2,020**	**751**	**2,771**

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [03/04/2008].
* Cumulative case counts include late reports and records that are otherwise reconciled. Therefore, cumulative counts may not equal new cases plus previous cumulative value.
† Episode Date for a case corresponds to the earliest date on record for the case according to the iPHIS hierarchy (Symptom Date > Clinical Diagnosis Date > Specimen Collection Date > Lab Test Date > Reported Date)
‡Note that one of the cases of influenza reported from Simcoe Muskoka District represents a case co-infected with Influenza A & B

Influenza Subtype(s):

During week 13, 4708 isolates were received by the Public Health Agency of Canada, with 393 testing positive for influenza A and 366 for influenza B. Among the reported influenza A isolates, 153 were from Quebec (38.9%), 143 from Ontario (36.4%), and 42 from Alberta (10.7%), and Saskatchewan reporting 17 (4.3%). Among the reported influenza B isolates, 131 were from Ontario (35.8%), 102 from Quebec (27.9%), 29 each from Saskatchewan and British Columbia (7.9%), and 27 from Alberta (7 4%).*

Antigenic Characterization:

The National Microbiology Laboratory (NML) has characterized 848 influenza viruses for the 2007-2008 influenza season: 402 (47%) A(H1N1), 92 (11%) A(H3N2) and 354 (42%) B viruses. Of the 402 influenza A(H1N1) viruses characterized, 388 (97%) were antigenically similar to A/Solomon Islands/3/2006 and 14 (3%) were antigenically similar to A/Brisbane/59/2007. Of the 92 influenza A(H3N2) viruses characterized, 5 (5%) were antigenically similar to A/Wisconsin/67/2005 and 87 (95%) were antigenically similar to A/Brisbane/10/2007. One of the 5 A/Wisconsin-like viruses had reduced titer to A/Wisconsin/67/2005 reference antiserum. Of the 354 influenza B isolates characterized, 4 (1%) were antigenically similar to B/Malaysia/2506/2004 and 350 (99%) were antigenically similar to B/Florida/4/2006 (belonging to the B/Yamagata lineage).**

Antiviral Resistance:

Since the start of the season, the NML has tested 607 influenza A isolates (447 H1N1 and 160 H3N2) for amantadine resistance and found that 158 (99%) of the 160 H3N2 isolates were resistant to amantadine and 5 (1.1%) of 447 H1N1 isolates were resistant (see recommendation from the 2006-2007 influenza season below).

The NML has also tested 812 influenza isolates (407 A/H1N1, 87 A/H3N2 & 318 B) for oseltamivir (Tamiflu) resistance and found that 74 (18.2%) of the 407 H1N1 isolates tested were resistant to oseltamivir. The resistant isolates were from NL, NS, NB, QC, ON, MB, AB and BC. These oseltamivir resistant strains remain sensitive to the antiviral amantadine.**

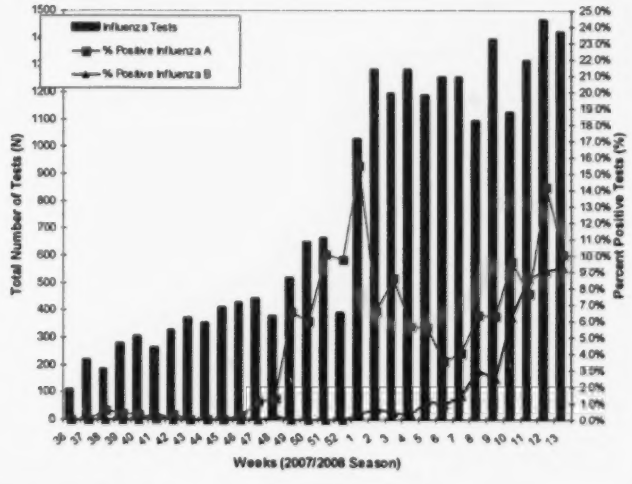
Note: The WHO recommends that the trivalent vaccine for the 2007-2008 season in the northern hemisphere (which includes Canada) contain an A/Solomon Islands (H1N1)-like virus; an A/Wisconsin (H3N2)-like virus; and a B/Malaysia-like virus.

The WHO recommends that the influenza vaccine to be used in the 2008-2009 season for the northern hemisphere contain the following: an A/Brisbane/59/2007 (H1N1)-like virus; an A/Brisbane/10/2007 (H3N2)-like virus; and a B/Florida/4/2006-like virus. *http://www.who.int/csr/disease/influenza/recommendations2008_9north/en/index.html*

* These data have been obtained from the Respiratory Virus Detection tables of Public Health Agency of Canada and do not include data from late reports to PHAC: Week 13, 2008

** These data have been obtained from the FluWatch report of the Public Health Agency of Canada for Week 12, 2008.

Figure 1: Total number of influenza tests performed and percent of positive tests in Ontario reported to the Centre for Immunization and Respiratory Infectious Diseases (CIRID), by report week*.



Source: Public Health Agency of Canada

* Total numbers reported include late reports; therefore totals may not be equal to the sum of the weekly numbers.

Note: Cumulative numbers for season to date are available through FluWatch: http://www.phac-aspc.gc.ca/fluwatch/

Table 4a: Institutional respiratory infection outbreaks in Ontario: New Outbreaks* in Week 13 and Total Outbreaks for the Season**

Institutional Respiratory Infection Outbreaks		
New Outbreaks*	**N**	**% (of outbreaks)**
Influenza A	6	31.6
Influenza B	2	10.5
Influenza A and B	0	0.0
Parainfluenza (All types)	0	0.0
RSV	0	0.0
Other organisms	0	0.0
No organism identified	11	57.9
TOTAL	***19***	***100***
Total Respiratory Infection Outbreaks of the Season to date**	**N**	**% (of outbreaks)**
Influenza A	73	14.6
Influenza B	49	9.8
Influenza A and B	1	0.2
Parainfluenza (All types)	26	5.2
RSV	34	6.8
Combined Outbreaks†	0	0.0
Other organisms	23	4.6
No organism identified	294	58.8
TOTAL	***500***	***100***
Types of Institutions (All Outbreaks) **	**N**	**% (of outbreaks)**
Long-Term Care Homes	288	57.6
Hospitals	18	3.6
Retirement Homes	49	9.8
Other	5	1.0
Unknown	140	28.0
TOTAL	***500***	***100***

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [03/04/2008]

* New outbreaks are those in which the date of onset of illness in the first case occurred and recorded through iPHIS in the current surveillance period; i.e. March 23, 2008 – March 29, 2008

** Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – March 29, 2008

† Combined outbreaks include outbreaks in which more than one non-influenza organism has been identified (e.g. RSV, parainfluenza, rhinovirus, etc.)

Table 4b: Outbreak Related Complications in institutional respiratory infection outbreaks in Ontario during the Surveillance Season*

Outbreak Related Complications (All Outbreaks)	N	% (of total cases)
Total Cases		
Residents	5865	72.8
Patients	367	4.6
Staff	1819	22.6
Total Cases	**8051**	**100**
Deaths		**% (of cases per role)**
Residents	130	2.2
Patients	9	2.5
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	185	3.2
Patients	9	2.5
Staff	1	0.1
Hospitalizations		**% (of cases per role)**
Residents	242	4.1
Staff	1	0.1
Outbreak Related Complications (Influenza Outbreaks)	**N**	**% (of total cases)**
Total Cases		
Residents	1416	74.1
Patients	73	3.8
Staff	423	22.1
Total Cases	**1912**	**100**
Deaths		**% (of cases per role)**
Residents	48	3.4
Patients	0	0.0
Staff	0	0.0
Pneumonia (Chest x-ray confirmed)		**% (of cases per role)**
Residents	44	3.1
Patients	2	2.7
Staff	1	0.2
Hospitalizations		**% (of cases per role)**
Residents	90	6.4
Staff	1	0.2

SOURCE: Ontario Ministry of Health and Long-Term Care, integrated Public Health Information System (iPHIS) database, extracted [03/04/2008]

* Season to date includes all outbreaks in which the date of onset of illness in the first case occurred from September 1, 2007 – March 29, 2008

Figure 2: Institutional respiratory infection outbreaks in Ontario by onset of illness in the first case: Total Outbreaks from September 1, 2007 – March 29, 2008 by causative organism

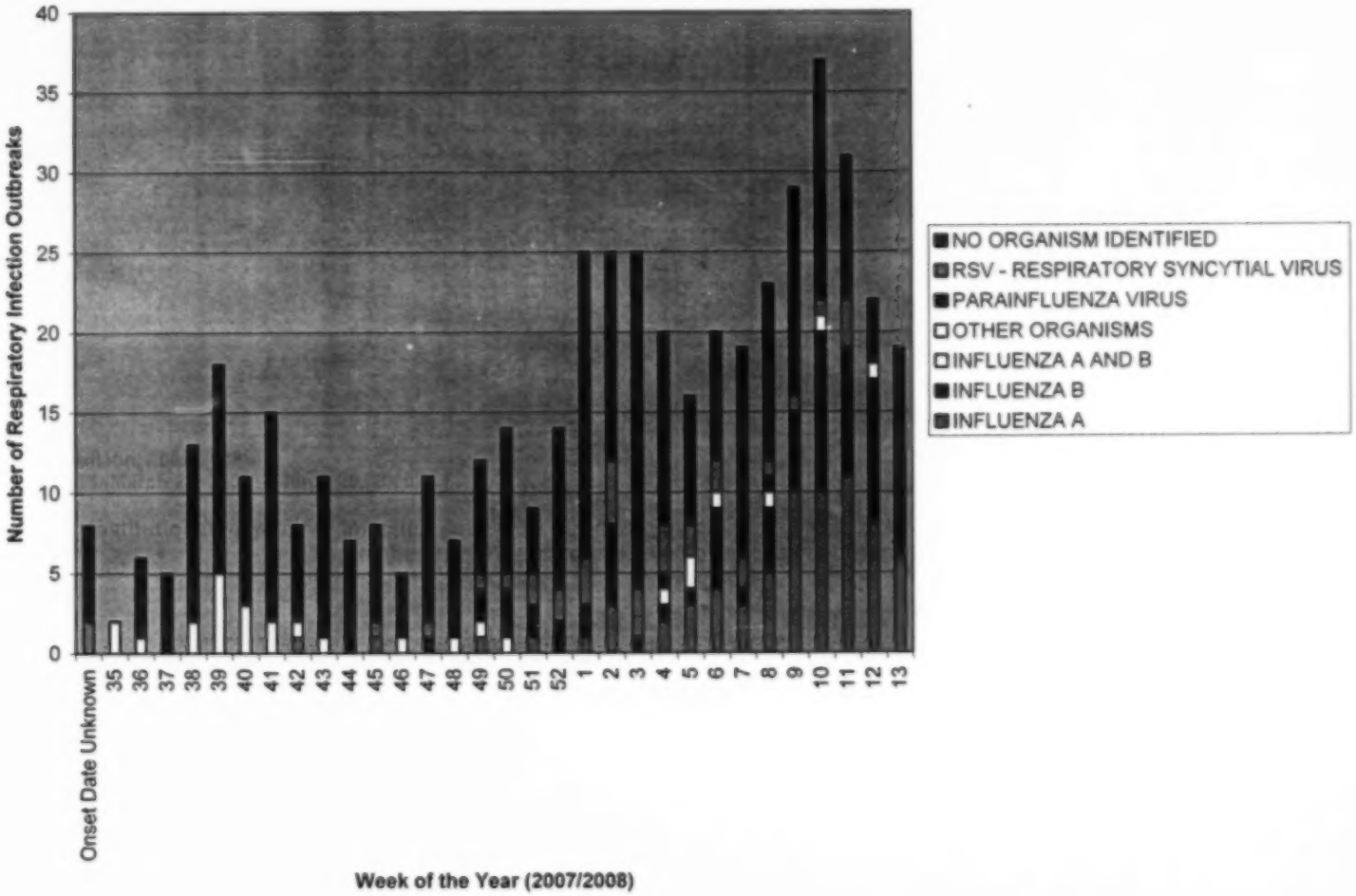
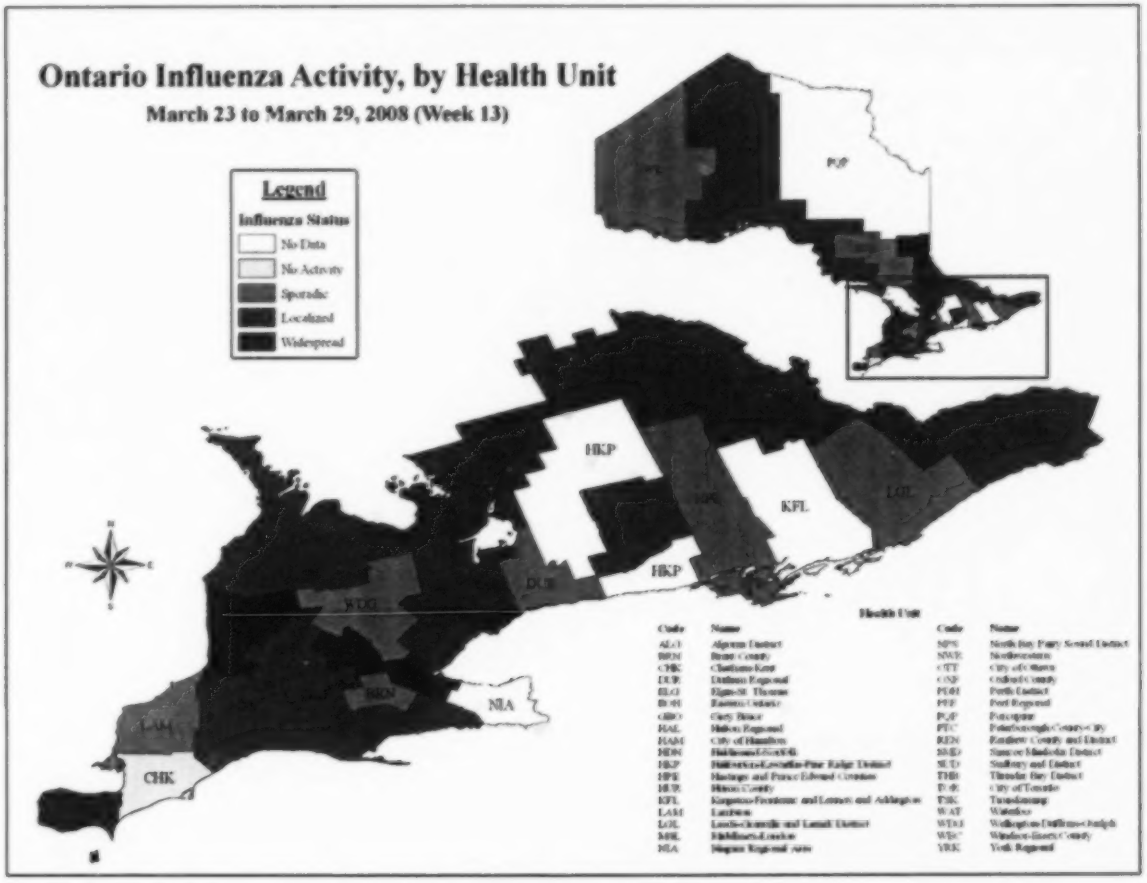


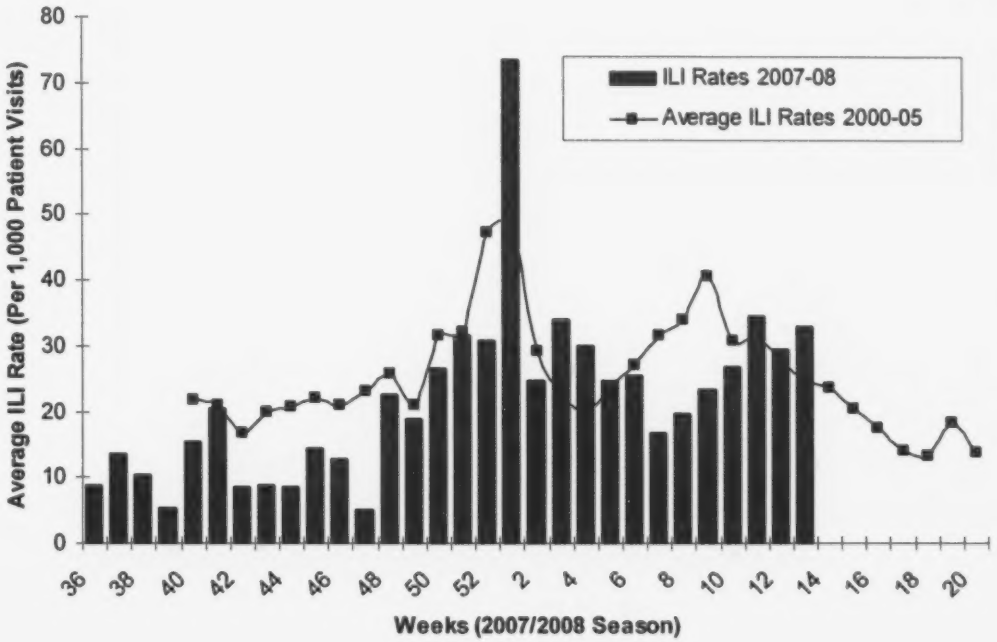
Figure 3: Influenza Activity* levels in Ontario by health unit for Week 13, 2008



SOURCE: MOHLTC [Provincial Influenza Activity Report (Appendix C) Database]

* Influenza activity levels are assigned by local public health units and reported to the MOHLTC by the Tuesday following the end of the surveillance week at 4 pm. Activity levels are assigned based on laboratory confirmations, ILI reports from various sources, and laboratory confirmed institutional outbreaks. Please refer to detailed definitions for the 2007-2008 season included in the Appendix-1]

Figure 4: Average influenza-like illness (ILI) consultation rate (per 1,000 patient visits) reported by sentinel physicians* in Ontario in 2007- 2008 season, by report week, Compared to Ontario average† (1999/2000 to 2004/05 seasons).



Source: Public Health Agency of Canada

* Sentinel physician information is reported to Public Health Agency of Canada.

†No data available for mean rate in previous years for weeks 21 to 39 (1999-2000 through 2004-2005 seasons). During weeks 20-39, 2002-2003/2004-2005 seasons, ILI is reported once every two weeks, on even weeks only.

Table 6: Average Influenza-like illness consultation rate (per 1,000 patient visits) by age group and postal code as reported by Sentinel Physicians* in Ontario, for Week 13.

Postal Code	0 – 4	5 – 19	20 – 64	65 +	Unknown
K0C1A0	0	2	0	0	0
K1L8H2	0	0	1	0	0
K2P1V3	0	0	0	0	0
K7H2W6	0	0	0	0	0
K0K2T0	0	0	0	0	0
K0K2T0	0	0	0	0	0
K0L1H0	2	0	0	0	0
K0M1A0	0	0	0	0	0
L4L4Y7	0	0	6	0	0
L4J7Y3	0	0	0	0	0
L4C2N9	0	0	0	0	0
L4G7Y3	0	0	0	0	0
M5M1B2	0	0	0	0	0
M0G4A1	0	0	0	0	0
M4E1V8	1	0	0	0	0
M2N6H7	0	0	0	0	0
M2J2Z1	0	0	1	0	0
M9W6N5	0	0	0	0	0
L5J2W4	0	0	0	1	0
L4Y2N8	0	0	0	0	0
L6V4H6	0	0	1	0	0
L9W1G2	0	0	1	1	0
L6J1X8	0	0	0	0	0
L7R1M6	0	0	1	0	0
L9H1V1	0	0	1	0	0
L0R1H2	0	0	0	0	0
L8W3J6	0	0	0	0	0
L2E7H1	0	0	0	0	0
N1R2L7	0	2	0	0	0
N2G1P2	0	0	0	0	0
N2M3B5	0	0	2	0	0
N5H1K9	0	0	0	0	0
N6A5R9	1	1	0	0	0
N6C2R5	0	0	0	0	0
N0M1L0	1	1	4	1	0
N0G1L0	0	0	0	0	0
N0C1E0	0	0	0	0	0
L3V5W5	0	0	0	0	0
P0H2H0	0	0	0	0	0
P0M2L0	0	0	0	0	0
P0S1K0	0	0	2	1	0
P0M1Z0	0	0	0	0	0
P7E1H5	1	0	0	0	0
P0T2E0	0	0	0	0	0
P0W1E0	0	0	0	0	0
P8N2Z6	0	0	0	0	0
ILI Sum	6	6	20	4	0
ILI Consultation Rate (per 1,000 patient visits)	64.52	70.59	31.15	14.34	0.00

Source: Public Health Agency of Canada
* Sentinel physician information is reported to the Public Health Agency of Canada
Note: The small numbers of sentinel physicians reporting at the local level make the ILI rates unstable. Please interpret these data correspondingly.

FURTHER INFORMATION

1. Ontario Ministry of Health and Long-Term Care
   Previous issues of the *Ontario Influenza Bulletin* can be accessed at:
   http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_07/flubul_mn.html

2. Health Agency of Canada
   Issues of FluWatch can be accessed at:
   www.phac-aspc.gc.ca/fluwatch/

3. United States Centers for Disease Control and Prevention
   http://www.cdc.gov/flu/weekly/fluactivity.htm

4. European Influenza Surveillance Scheme
   http://www.eiss.org/cgi-files/bulletin_v2.cgi

INFORMATION ABOUT AVIAN INFLUENZA

For latest information on the status of avian influenza worldwide please use the following link:
Public Health Agency of Canada
http://www.phac-aspc.gc.ca/h5n1/index.html

APPENDIX - I

Definitions for influenza activity levels:

No Data: No activity report corresponding to the surveillance week was received at the Ministry of Health and Long-Term Care Call Centre by the Tuesday (at 4 p.m.) following the end of the surveillance period.

No Activity: No laboratory confirmed* influenza and NO outbreaks detected within the health unit/ influenza surveillance area, within the prior week, although sporadically occurring ILI may or may not be present.†

Sporadic: Sporadically (infrequently) occurring **ILI and at least one lab-confirmed influenza* case with NO outbreaks** detected within the health unit area.†

Localized: sporadically occurring **ILI and lab-confirmed influenza* together with outbreaks of ILI** in schools and work sites, or laboratory-confirmed influenza in residential institutions occurring in < 50% of the health unit . Outbreaks affect a single and/or adjacent geographic area within the health unit jurisdiction, e.g. outbreaks in a nursing home and a school in close proximity to each other.†

Widespread: sporadically occurring **ILI and lab-confirmed influenza* together with outbreaks of ILI** in schools and work sites, or laboratory-confirmed influenza in residential institutions occurring in > 50% of the health unit. Outbreaks affect multiple and non-adjacent geographic areas within the health unit jurisdiction, such as two or more regions of the health unit, two or more municipalities, two or more electoral wards, etc.†

* Confirmation of influenza within the surveillance region at any time within the prior week
† Sub-regions within the province or territory as defined by the provincial/territorial epidemiologist

Influenza-Like Illness (ILI) Definitions:

A) ILI in the general population:

Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

B) ILI/Influenza outbreaks:

Schools and work sites: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions: two or more cases of ILI within a seven-day period, **including at least one laboratory confirmed case**.

Influenza Surveillance Weeks 2008 and date of submission of Appendix C

WEEKS	START	END	Appendix C Submission to MOHLTC
WK14	30-Mar-08	5-Apr-08	8-Apr-08
WK15	6-Apr-08	12-Apr-08	15-Apr-08
WK16	13-Apr-08	19-Apr-08	22-Apr-08
WK17	20-Apr-08	26-Apr-08	29-Apr-08
WK18	27-Apr-08	3-May-08	6-May-08
WK19	4-May-08	10-May-08	13-May-08
WK20	11-May-08	17-May-08	20-May-08
WK21	18-May-08	24-May-08	27-May-08
WK22	25-May-08	31-May-08	3-Jun-08
WK23	1-Jun-08	7-Jun-08	10-Jun-08
WK24	8-Jun-08	14-Jun-08	17-Jun-08
WK25	15-Jun-08	21-Jun-08	24-Jun-08
WK26	22-Jun-08	28-Jun-08	1-Jul-08
WK27	29-Jun-08	5-Jul-08	8-Jul-08
WK28	6-Jul-08	12-Jul-08	15-Jul-08
WK29	13-Jul-08	19-Jul-08	22-Jul-08
WK30	20-Jul-08	26-Jul-08	29-Jul-08
WK31	27-Jul-08	2-Aug-08	5-Aug-08
WK32	3-Aug-08	9-Aug-08	12-Aug-08
WK33	10-Aug-08	16-Aug-08	19-Aug-08
WK34	17-Aug-08	23-Aug-08	26-Aug-08
WK35	24-Aug-08	30-Aug-08	2-Sep-08